



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,237	01/23/2004	Takemori Takayama	KOM-0153/INO/DIV 3	5466

23353 7590 06/20/2005

RADER FISHMAN & GRAUER PLLC
LION BUILDING
1233 20TH STREET N.W., SUITE 501
WASHINGTON, DC 20036

EXAMINER

SAVAGE, JASON L

ART UNIT	PAPER NUMBER
----------	--------------

1775

DATE MAILED: 06/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/762,237

Applicant(s)

TAKAYAMA ET AL

Examiner

Jason L. Savage

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

5,000

Claim Rejections - 35 USC § 102/103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. Claims 7-10 and 12-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Takayama'549 et al (US 5,948,549).

Takayama'549 teaches a copper based sintered contact material which is sinter bonded to an iron-base material (col. 1, ln. 7-11). Takayama'549 further teaches the contact may be a CuSn alloy which contains multiple materials capable of forming intermetallics (col. 11, Table 4). Takayama'549 teaches the inclusion of many of the elements from Applicant's claimed first group of elements capable of forming an intermetallics including Ni, Si, Co, Al and P (Table 4 and Col. 8, ln. 1-7). Takayama'549 also teaches many of the elements from the claimed second group intermetallic forming elements including Cu, Sn, Mn, Cr, Mo and W (Table 4 and Col. 8, ln. 9-13).

Takayama'549 further exemplifies an embodiment wherein a contact contains elements capable of forming a first intermetallic of NiSi and a second intermetallic of SnMn wherein the total amount of intermetallic compound is 10% by weight (Table 4, Nos. 24-25). Although the prior art teaches amounts based on weight % and the present invention has claims directed to volume %, it is the position of the Examiner that a teaching of 10% by weight is equivalent to a 10% by volume since both groups are copper based sintered contact materials containing intermetallic materials of the same elements.

Art Unit: 1775

In the alternative, absent the criticality of the volume % being 10% or less as opposed to the weight % being 10% or less, it would not provide a patentable distinction over the prior art since it would be within the purview of one of ordinary skill in the art to include lesser amounts of intermetallics which could fall within the range of volume % claimed by Applicant with a reasonable expectation of success since Takayama'549 teaches that 10% by weight is the maximum intermetallic content and no limit placed on the minimum intermetallic content.

In further support of this, Takayama'549 teaches that the amounts of each element can vary greatly such as the Ti content may be a little as 0.2 wt%, Si and Al contents may be as little as 0.1 wt% to 3.0 wt% (col. 9, ln. 62-67). The Ni content may be as low as 0.5 wt% (col. 13, ln. 20-39). It would have been within the level of one of ordinary skill in the art to have recognized that alternate amounts of the elements could have been added to the contact with a reasonable expectation of success since Takayama'549 teaches a variety of ranges for each of the elements may be used in the contact. Once again, absent a teaching of the criticality of the volume % of the intermetallics being less than 10, it would not provide a patentable distinction over the prior art since one could have produced a contact meeting the claim limitation simply by following the teachings of Takayama'549 wherein the minimum amounts disclosed for each element were used instead.

Regarding claim 8, Takayama'549 teaches that non-metallic particles may be contained in the contact including oxides (col. 5, Table 1, No. 20-26). While Takayama'549 teaches the non-metallic particle content in wt%, it is the position of the

Art Unit: 1775

Examiner that a wt% of 1.5 or less would equate to a volume % of less than 4 % since the amount of material is directly correlated to the volume it would occupy.

Regarding claim 9, Takayama'549 teaches that Mo, Co, Fe may be dispersed in an amount within the range claimed by Applicant (col. 7, Table 2, No. 8-10 and 14).

Regarding claim 10, Takayama'549 teaches that graphite may be contained in an amount less than 1 wt% (col. 5, Table 1, No 14-15).

Regarding claim 12, Takayama'549 teaches that the contact contain roughly 10% Sn and 5% Pb (col. 7, Table 2, No 1-14).

Regarding claim 13, Takayama'549 teaches what is set forth above but teaches a Sn content of up to 10 wt% as opposed to the claimed range of 12-16 wt%. However, absent a teaching of the criticality of the Sn content being at least 12 wt% it would not provide a patentable distinction since it would have been within the purview of one of ordinary skill in the art to recognize that contents of some materials in amounts other than what is explicitly exemplified in the reference may be suitable for use in the contact with a reasonable expectation of success. Specific claimed alloy, whose compositions are in such close proportions to those in the prior art that, prima facie one skilled in the art would have expected them to have the same properties, must be considered to have been obvious from known alloys, *Titanium Metals Corporation of America V. Banner*, 227 USPQ 773.

Regarding the limitation that a Cu-Sn compound phase is dispersedly precipitated in the structure thereof, Takayama'549 specifically recites that a Cu-Sn

Art Unit: 1775

compound alloy is added when forming the contact material and as such, one would reasonably expect precipitated Cu-Sn structures to be contained within the contact.

Regarding claims 14 and 19, Takayama'549 teaches that other elements such as Mn, Be and Ag may be added to the contact material (col. 16, ln. 17-60), although it is silent to the addition of lubricating particles such as those claimed. However, the use of solid lubricating particles in copper sintered contact materials is known and conventionally practiced in the art. It would have been obvious to one of ordinary skill in the art to have used known additives such as solid lubricants in the contact material order to improved the overall resistance to seizure of the sintered contact.

Regarding claim 15, Takayama'549 is silent to the sintered contact being a double-layered contact however, sintered double-layered contacts are structure that are well known in the art. Absent a teaching of the criticality of the contact being a double-layered contact, it would not provide a patentable distinction over the prior art since it would have been within the level of one of ordinary skill in the art to have formed the contact of Takayama'549 into any known contact structure, including a double-layered contact, with a reasonable expectation of success.

Regarding claim 16, Takayama'549 teaches that P is preferably contained in an amount of 0.1 to 1.0 wt% (col. 8, ln. 1-8). Takayama'549 further teaches that other elements such as Cr, Si, Al and Ti may be added as well (col. 10, ln. 1 – col. 10, ln. 25).

Regarding claim 17, the non-metallic particles disclosed by Takayama'549 would restrain shrinkage of the sintered layer just as much as the non-metallic particles claimed by Applicant.

Art Unit: 1775

Regarding claim 18, Takayama'549 teaches the addition of CuSn containing greater than 30 wt% Sn (col. 14, ln. 44-61). Takayama'549 also teaches the addition of Sn primary powder (col. 11, Table 4, No 18-25). It would have been obvious to have used both the High Sn containing copper and primary Sn powder since Takayama'549 teaches both are suitable for use.

2. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama'549 et al (US 5,948,549) as evidenced by Takayama'775 (US 6,015,775).

Takayama'549 teaches a copper based sintered contact material containing a variety of materials including graphite; however it is silent to the particle size of the graphite materials. Takayama'775 teaches a copper based sintered contact material (col. 4, ln. 15-23) which may contain solid lubricant particles such as graphite (col. 3, ln. 16-47). Takayama'775 further teaches that the particle size of the solid lubricant particles may be between 100 and 3000 μ m (col. 3, ln. 17-29). Although Takayama'775 teaches that the solid lubricants are intended to protrude from the contact surface in order to provide a self-lubricating sintered sliding member whereas Takayama'549 is silent to the positioning of the particles, Takayama'775 is merely being provided as evidence that the use of solid lubricant particles having sizes within the range claimed is known in the art.

In response to the issue whether the reference is nonanalogous art, it has been held that the determination that a reference is from a nonanalogous art is twofold. First, one decides if the reference is within the field of the inventor's endeavor. If it is not, one

Art Unit: 1775

proceeds to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved, *In re Wood*, 202 USPQ 171, 174. In the instant case, both Takayama'549 and Takayama'775 are generally drawn to copper based sintered contact materials containing solid lubricant particles. Absent a teaching of the criticality of the particles being within the range claimed by Applicant, it does not provide a patentable distinction over the prior art since the use of solid particles having a size of less than 200 μm is known and would have been an obvious design choice to one of ordinary skill in the art.

Response to Arguments

Applicant's arguments with respect to claims 7-12 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues that claim rejections under USC 102 should be withdrawn since the Action has conceded that "Takayama'549 is silent as to the volume % of intermetallics in the contact" rendering the rejection 102 of claim 7 ineffective. While Applicant has correctly cited a quote made by the Examiner in the prior action, the quote has been taken out of context.

The Examiner concedes that Takayama'549 is silent to the volume % of intermetallics. However, due to the reasons set forth in the rejection above, it is the position of the Examiner that such Takayama'549 teaches embodiments which would inherently an intermetallic volume % within the claimed range. The mere fact that a reference does not explicitly recite the composite or material contain a certain property

Art Unit: 1775

or parameter is not proof that the property may not be inherent. Applicant has failed to provide any reasoning or proof as to why the Examiner's assertion would be invalid. As such, Applicant's arguments that the 102 rejection to claim 7 is ineffective is not persuasive.

The Patent and Trademark Office can require Applicant to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on Applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 U.S.P.Q. 431 (CCPA 1977).

In a further attempt to clarify the rejection, the rejection under 103 has been added. In the event that the teaching of less than 10 wt% does not anticipate the claim limitation of 10 volume % or less, such an amount of intermetallics would have been obvious. The reason for such a limitation being obvious being the teaching of 10 wt% is specified as being the maximum intermetallic content and Takayama'549 teaches amounts of intermetallic formers which are at levels that would be unlikely to form intermetallics exceeding the claimed volume %.

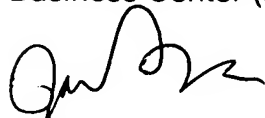
As such, Applicant's arguments with respect to the rejections to claims 7-10 and 12 were not persuasive and not withdrawn.

Art Unit: 1775

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason L Savage whose telephone number is 571-272-1542. The examiner can normally be reached on M-F 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jason Savage
6-6-05


DEBORAH JONES

SUPERVISORY PATENT EXAMINER